Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
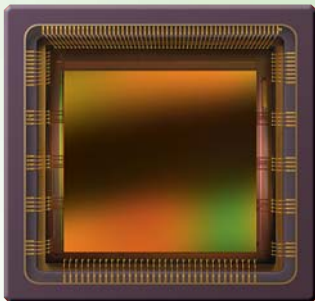Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

CMV4000

High speed global shutter machine vision sensor

SENSOR DESCRIPTION

The CMV4000 is a high sensitivity, pipelined global shutter CMOS image sensor with 2048 x 2048 pixel resolution capable of HD format. Pipelining allows exposure during read out. The state-of-the-art pixel architecture offers true correlated double sampling (CDS) in global shutter mode, reducing the fixed pattern noise and dark noise significantly. The imager integrates 16 LVDS channels each running at 480 Mbps resulting in a 180 fps frame rate at full resolution at 10 bit per pixel. Driving and read-out are programmed over a serial peripheral interface. An internal timing generator produces the signals needed for read-out and exposure control of the image sensor. External exposure triggering remains possible. A 12 bit per pixel mode is available at reduced frame rate.

SENSOR FEATURES

- Pipelined global shutter with CDS
- Optical format of 1"
- 2048 * 2048 active pixels on a 5.5 µm pitch
- 180 Frames/s in 10 bit mode
- 37 Frames/s in 12 bit mode
- Row windowing capable of up to 8 separate ROIs
- X-Y mirroring function
- 16 LVDS-outputs @ 480 MHz multiplexable to 8, 4 and 2 at reduced frame rate
- Multiple High Dynamic Range (HDR) modes up to 90 dB
- On chip temperature sensor
- On chip timing generation
- SPI-control
- Ceramic 95 pin µPGA package (18.6 mm x 18.6 mm)

APPLICATION FIELDS

- Machine vision
- Motion control
- Traffic monitoring
- High speed inspection
- Security
- HD camcorders
- Automotive
- Barcode reading

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SENSOR SPECIFICATIONS

Specification	Value
Resolution	2048 (h) x 2048 (v)
Pixel size	5.5 x 5.5 µm²
Full well charge	13.5 Ke-
Conversion gain	0.075 LSB/e- (10 bit mode)
Sensitivity	4.64 V/lux.s (with micro lenses)
Temporal noise	13 e- (RMS)
Dynamic range	60 dB
Optical format	1"
Parasitic light sensitivity	<1/50 000
Dark current	125 LSB/s (25C die temperature)
Operating temperature range	-30 °C to +70 °C
Power consumption	600 mW
Fixed pattern noise	<1 LSB (<0.1% of full swing)

ORDERING INFORMATION

Product number	Description
CMV4000-2E5M0PP	Monochrome version without micro lenses
CMV4000-2E5M1PP	Monochrome version with micro lenses
CMV4000-2E5C1PP	RGB Bayer color version with micro lenses